

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of monitoring expression of a chosen target gene, wherein accumulation of a molecule that varies a NMR signal and can be quantified by NMR, without the requirement to add an exogenous substrate, comprising the steps:

(1) preparing a plasmid in which a polyphosphate kinase (PPK) gene is connected in-frame and downstream of the target gene;

(2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;

(3) culturing the selected transformant, and inducing expression of the PPK gene; and

(4) placing the transformant in which the expression of the PPK gene is induced into a device for measuring NMR, quantifying the accumulation of polyphosphate having a mean value strand length equal to or less than 50 mer and produced by the transformant after the expression has been induced, by preparing a real time one-dimensional NMR profile non-destructively, and/or performing real time 1H-NMR imaging non-destructively, without adding an exogenous substrate.

2 -9. (canceled)

10. (currently amended) A method for screening various types of agents which inhibit or promote expression of translation products of a target gene; said method, wherein the method of monitoring expression of a chosen gene according to any one of claims 1 to 9 is used;
comprising:

1) preparing a plasmid in which a polyphosphate kinase (PPK) gene is connected in-frame and downstream of the target gene;

(2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;

(3) culturing the selected transformant in the presence and absence of a test substance without adding an exogenous substrate, and inducing expression of the PPK gene;

(4) placing the transformant in which the expression of the PPK gene is induced into a device for measuring NMR, quantifying the accumulation of polyphosphate having a mean value strand length equal to or less than 50 mer and produced by the transformant after the expression has been induced, by preparing a real time one-dimensional NMR profile non-destructively, and/or performing real time ¹H-NMR imaging non-destructively, without adding an exogenous substrate; and

(5) comparing the accumulation of polyphosphate in the presence and absence of the test substance identifying agents inhibiting or promoting the expression of translation products of the target genes.